
ENVIRONMENTAL Fact Sheet



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Universal Waste Lamps: Management Requirements for Handlers and Transporters

INTRODUCTION

Fluorescent and high intensity discharge (HID) lamps contain a small quantity of mercury that may pose a hazard to human health or the environment when improperly managed. Due to this concern, the State of New Hampshire adopted [Env-Wm 1101 - 1114](#), the Universal Waste Rule. This rule regulates the management of universal waste lamps so as to promote recycling, pollution prevention and safe handling methods. The Universal Waste Rule is explained in this fact sheet.

Why is mercury an environmental concern?

Mercury is a heavy metal that can accumulate in living tissue and cause adverse health effects. A small amount of mercury is an essential component in fluorescent and HID lamps, but when a lamp is broken or disposed of in a solid waste landfill or incinerator, the mercury can contaminate air, soil, surface water and groundwater. In New Hampshire, mercury has been detected in freshwater fish and a statewide fish consumption advisory has been issued by the N.H. Department of Health and Human Services. For more information on mercury in New Hampshire's environment, see the Department of Environmental Services' (DES) *New Hampshire Mercury Reduction Strategy*, published October 1998.



Are there other contaminants in lamps we should be concerned about?

HID lamps also contain small quantities of lead. Incandescent lamps may contain lead and cadmium.

Is fluorescent lighting still a good environmental and economic choice?

Yes. The use of energy-efficient lighting reduces electricity needed from power plants, which then reduces harmful emissions of mercury, carbon dioxide and nitrogen oxide. Also, when less energy is demanded, electric utilities need less generating capacity, resulting in more savings for customers.



REQUIREMENTS FOR MANAGING UNIVERSAL WASTE LAMPS

Universal waste lamps generated by businesses, industry and institutions may not be disposed of as a solid waste unless they are below the regulatory limits for mercury when subjected to a toxicity test required by the U.S.

Environmental Protection Agency (EPA) and DES. If test results from the Toxicity Characteristic Procedure (TCLP) demonstrate a particular lamp is below the regulatory level of .2 mg/liter, it may

legally be disposed as solid waste. However, because these lamps still contain mercury, it is strongly recommended they be recycled since they can contribute mercury to the environment.

Generators of waste are responsible for determining whether their wastes are hazardous and, if so, managing them in accordance with the requirements of the *N.H. Hazardous Waste Rules*. These requirements may include use of a hazardous waste manifest, New Hampshire registered hazardous waste transporter, and delivery to an authorized hazardous waste facility.

Alternatively, universal waste lamps may be handled under Env-Wm 1100 Universal Waste Rule that went into effect October 13, 2001 and further described in this fact sheet. DES believes that recycling is the preferred option for managing universal waste lamps and that the Universal Waste Rule will promote the recycling and proper management of universal waste lamps.

Universal Waste

Universal Waste "Universal wastes" are wastes that meet the definition of hazardous waste in the *N.H. Hazardous Waste Rules*, but which, during accumulation and transport, pose a relatively low risk compared to other hazardous wastes. Wastes that DES has determined meet universal waste criteria include used antifreeze, lamps, mercury-containing devices, cathode ray tubes, certain types of batteries, and recalled or suspended hazardous waste pesticides regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). EPA recently added mercury-containing lamps to the Federal Universal Waste Rule that also includes thermostats, batteries, and recalled or suspended pesticides.

Generator Status

Under the Universal Waste Rule, hazardous waste generators are not required to include universal waste lamps and other universal wastes in their calculation of generator status in accordance with the *N.H. Hazardous Waste Rules*, Env-Wm 503. Universal wastes are also not subject to the generator fee required by Env-Wm 512.02.

Universal Waste Consolidation

A facility may collect universal waste lamps from other sites or generators without a permit, provided the facility meets the handler requirements described in this fact sheet and complies with other applicable federal, state, and local regulatory requirements.

REQUIREMENTS FOR HANDLERS

A "**handler**" of universal waste lamps means: (1) a generator of universal waste lamps; or (2) an owner or operator of a facility that receives universal waste lamps from other handlers, accumulates the lamps, and sends the lamps to another handler or to a destination facility. Handlers of universal waste lamps must either meet the following standards or comply with the generator and/or facility requirements of the *N.H. Hazardous Waste Rules*.

1. Release Prevention

Manage universal waste lamps in a way that prevents releases of hazardous constituents to the environment. See the section titled: "*Best Management Practices for Universal Waste Lamps*" later in this fact sheet.

2. Quantity Limits

Universal waste handlers are either very large, large, or small quantity handlers,

- a. **Small Quantity Handlers** -- accumulate less than 5,000 kilograms (approximately 11,000 pounds) of combined universal wastes on-site at any time. Approximately 17,600 forty-eight inch fluorescent tubes would weigh 11,000 pounds.
- b. **Large Quantity Handlers** -- accumulate 5,000 kilograms or more, but less than 20,000 kilograms, of combined universal wastes at any one time and must also comply with Env-Wm 1104 described in this fact sheet in the section titled, *Additional Requirements for Large Quantity Handlers*.
- c. **Very Large Quantity Handlers** -- accumulate 20,000 kilograms or more of combined universal wastes at any one time and must also comply with Env-Wm 1105 described in this fact sheet in the section titled, *Additional Requirements for Very Large Quantity Handlers*.

3. Labeling

Clearly label or mark each lamp or container of waste lamps with any one of the following phrases: "Universal Waste - Lamp(s)"; "Waste Lamps"; or "Used Lamps."

4. Containers

Store both intact and broken lamps in containers that are compatible with the universal waste, in good condition, and closed at all times except when lamps are being added to, or removed from, the container. If containers are stored outside, they must be covered (for example, with a tarp) to prevent precipitation from coming in contact with the containers.

5. Accumulation Time Limits

a. Accumulate universal waste lamps for no longer than one year from the date the universal waste lamps are generated or received from another handler.

b. Demonstrate the length of time that the universal waste lamps have been accumulated starting from the date the lamps became waste or were received. The handler may make this demonstration by:

- (1) Marking or labeling containers with the starting accumulation date; or
- (2) Maintaining an inventory system on-site that identifies the earliest date lamps were added to a container or received from off-site.

5. Training

Ensure that all employees who handle or have responsibility for managing universal waste lamps are thoroughly familiar appropriate handling and emergency procedures.

6. Off-Site Shipments

a. Handlers are prohibited from sending or taking universal waste lamps to a place other than another handler, an authorized lamp recycling facility, or an authorized hazardous waste facility.

b. Prior to sending a shipment of universal waste lamps to another handler or destination facility, the originating handler must ensure that the receiving handler agrees to receive the shipment.

c. Shipments must meet all applicable United States Department of Transportation (US DOT) regulations for universal waste lamps.

d. If a universal waste lamp shipment is rejected by an intermediate handler or destination facility, arrangements must be made by the originating handler to:

- (1) Receive the waste lamps back when notified that the shipment has been rejected, or
- (2) Send the waste lamp shipment to an alternate facility.

7. Exports

A handler of universal waste lamps who sends the lamps to a foreign destination must comply with the requirements for international shipments as set forth in Env-Wm 1102.08 of the *N.H. Hazardous Waste Rules*.

ADDITIONAL REQUIREMENTS FOR LARGE QUANTITY HANDLERS

A handler who accumulates 5,000 kilograms or more of combined universal wastes must comply with Env-Wm 1104. These requirements include:

1. Prior to collecting 5,000 kilograms or more of combined universal wastes, notify the NH DES of this activity and obtain an EPA Identification Number if one has not already been obtained.



2. Keep records for three years on each shipment of waste received or sent. These records must include:

- a. The date of each shipment,
- b. The quantities of each shipment,
- c. The name and address of the handler or facility from which waste lamps were received or shipped to.

ADDITIONAL REQUIREMENTS FOR VERY LARGE QUANTITY HANDLERS

A handler who accumulates 20,000 kilograms or more of combined universal wastes must comply with Env-Wm 1105. These requirements include:

1. Submit a notification form for each on-site location where universal waste is accumulated.
2. Ensure universal waste is not stored within a 100-year floodplain.
3. Complete and document weekly inspections of all universal waste storage areas.
4. Establish and post contingency plans and emergency procedures and provide emergency response equipment.
5. Post emergency response information at each universal waste storage area and provide access security measures to universal waste storage areas.
6. Provide closure plans and sufficient financial assurance for closure.

REQUIREMENTS FOR TRANSPORTERS

1. Transporters are not required to obtain a New Hampshire hazardous waste transporter registration or use a hazardous waste manifest for universal waste lamps, but must meet all applicable US DOT regulations.

2. Transporters are prohibited from sending or taking universal waste lamps to a place other than:

- a. Another handler,
 - b. An authorized lamp recycling facility,
 - c. An authorized hazardous waste facility.
3. Staging During Transportation

a. Transporters who remove universal waste lamps from their vehicles and stage them temporarily are not required to obtain a hazardous waste transfer facility permit, but are subject to US DOT and N.H. Dept. of Safety regulations.

b. Transporters who stage universal waste lamps for more than 10 days must also meet universal waste handler requirements.

c. Transporters must not stage more than a combined total of 20,000 kilograms (approximately 44,000 pounds) of universal waste lamps and other universal wastes on-site at any time.

4. Exports

Transporters taking universal waste lamps to a foreign destination must comply with the requirements for international shipments as set forth in Env-Wm 604.04 of the *NH Hazardous Waste Rules*.

REQUIREMENTS FOR HANDLERS AND TRANSPORTERS

Prohibitions

Handlers and transporters may not intentionally crush, dismantle or treat universal waste lamp(s) unless a permit has been obtained in accordance with *N.H. Hazardous Waste Rules* Env-Wm 353.

Handling Procedures for Broken or Damaged Lamps

Broken lamps may be managed as a universal waste but are considerably more expensive to recycle or dispose as compared to intact lamps.

1. Immediately contain and clean up all releases from broken, leaking, or damaged universal waste lamps.

2. Place any broken or damaged lamps and any residues resulting from breakage or damage in a secure container.

3. The container must be closed and sealed, structurally sound and compatible with the broken lamps. A plastic lined box, fiber drum, or a plastic bucket with a lid that seals is recommended since some types of metal containers may be incompatible with mercury. Ensure the container is clean, because if it is contaminated with other chemicals, those substances may react with the mercury.

4. Accidentally broken lamps may be sent to a recycling facility or a hazardous waste treatment, storage or disposal facility authorized to accept broken lamps. All applicable US DOT packaging and shipping requirements must be met.



FOR MORE INFORMATION

Questions on Universal Waste Rule should be directed to DES's Pollution Prevention & Education Section at 603-271-2956 or the Hazardous Waste Compliance Section at 603-271-2942.

A list of mercury containing lamp recycling facilities, DES's New Hampshire Mercury Reduction Strategy, copies of other fact sheets, and the N.H. Hazardous Waste Rules are available from DES's Public Information and Permitting Office at 603-271-2975, (TDD Access: Relay NH 1-800-735-2964). Copies of DES fact sheets and rules are also available on DES's web site at www.des.state.nh.us.

BEST MANAGEMENT PRACTICES FOR MERCURY-CONTAINING LAMPS

The following practices are recommended to prevent breakage:

- (1) Store used intact lamps in one of the following containers:
 - a. The same boxes that new lamps were shipped in or other boxes of similar size; or
 - b. A fiber drum or container specifically designed for lamp storage.
- (2) Ensure containers are sturdy; without holes, rips or tears; and stable (to prevent tipping over).
- (3) Fluorescent tube lamps (e.g., T-8, T-12) should be stored upright. Metal halide, mercury vapor and high intensity discharge (HID) lamps should be wrapped or packaged individually.
- (4) Use box spacers between lamps to prevent breakage.
- (5) Do not pack too many lamps into a container; the pressure could lead to breakage.
- (6) Do not store too few lamps in a container unless there is enough packing material to prevent breakage.
- (7) Do not tape lamps together. Many recycling facilities will not accept lamps that have been taped together.
- (8) Label drums: "HANDLE WITH CARE / FRAGILE" (in addition to identifying the contents as required by DES's policy).
- (9) Store boxes in a designated storage location away from high traffic areas.
- (10) Do not over stack. Stack filled boxes no wider than five across with each row perpendicular to the ones below it. Stacks should be no higher than five feet so lamps on the bottom are not crushed by the weight.
- (11) Avoid storing cardboard boxes and drums outside where they will be exposed to moisture. Use plastic containers if lamps must be stored outside.
- (12) Do not store lamps in a metal drum because this can lead to breakage.
- (13) Securely seal boxes with tape as soon as they are filled.



Cardboard boxes and fiber drums can be ordered from a lamp recycling facility, through catalogs, or purchased from carton distributors (see "Boxes" in the Yellow Pages).

Disclaimer: Information contained in this fact sheet is current as of March 5, 2002. Policy and regulatory changes occurring after this date may affect part or all of this information. For questions on the status of this information, contact DES at 603-271-2942.